

FIGURE 1: The particle, which is more polarizable than the surrounding media, is pulled toward a field maximum. When the signs of the voltages are reversed under AC conditions, the particle feels the same force.

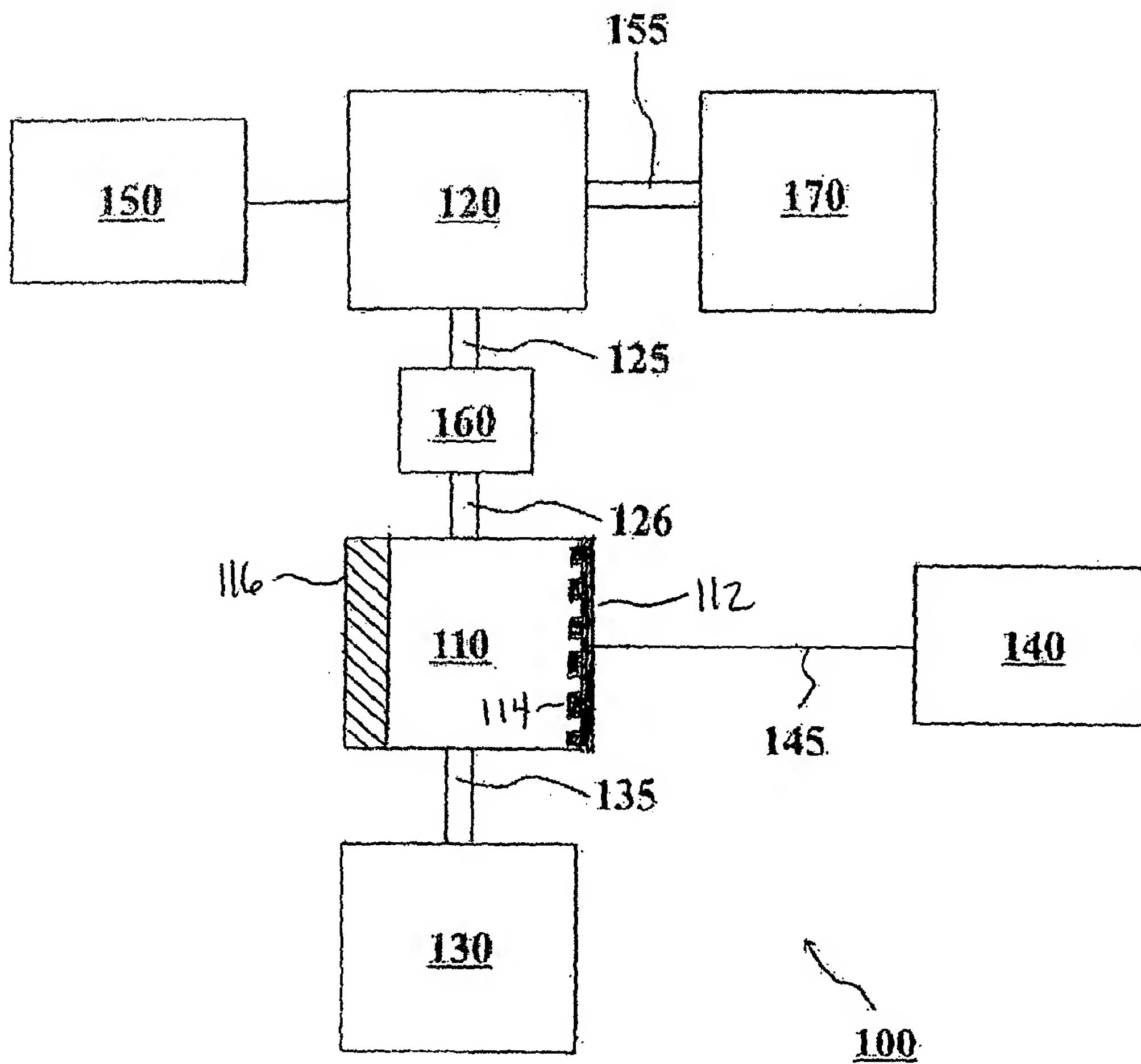


FIG. 2

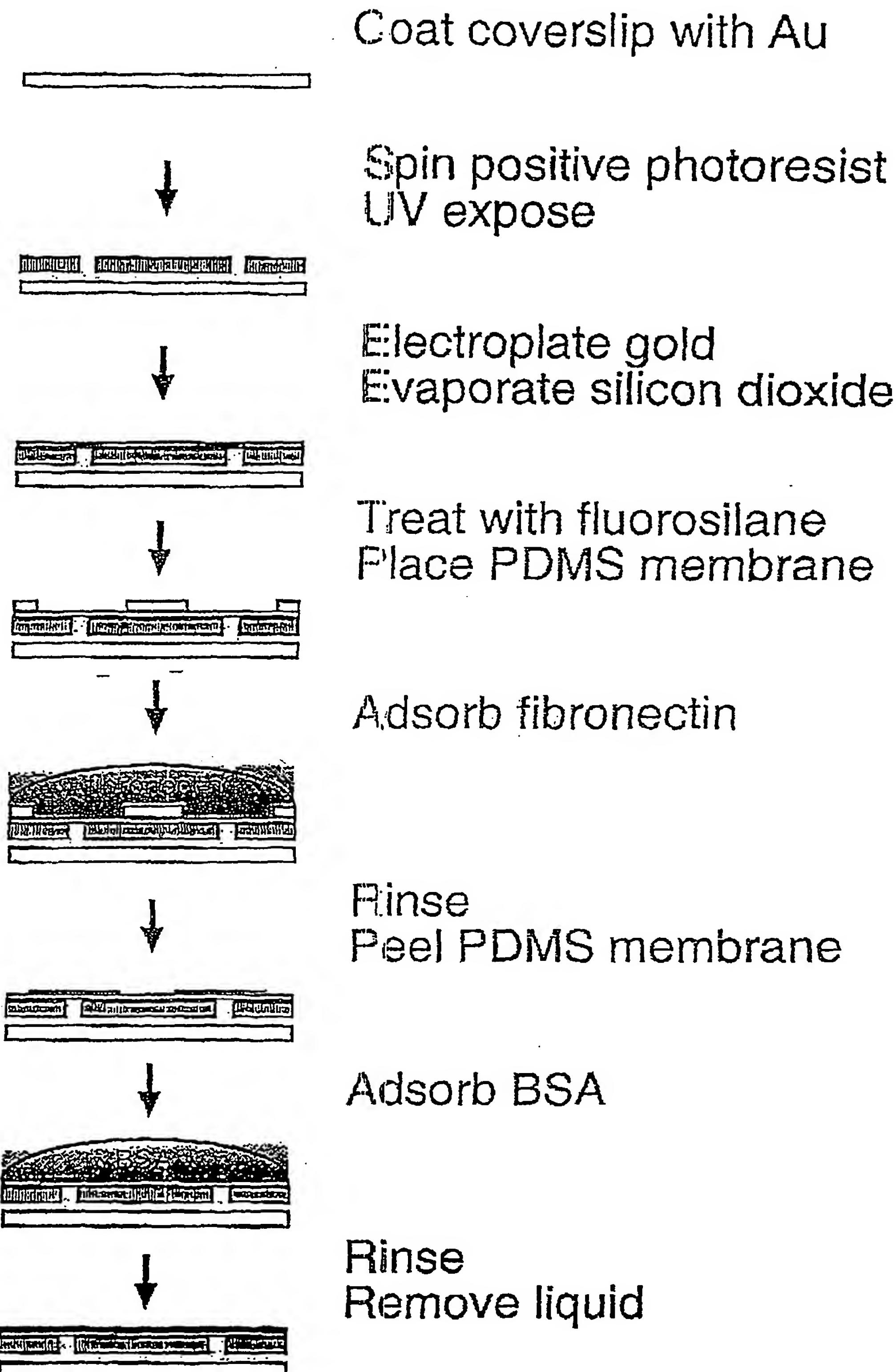
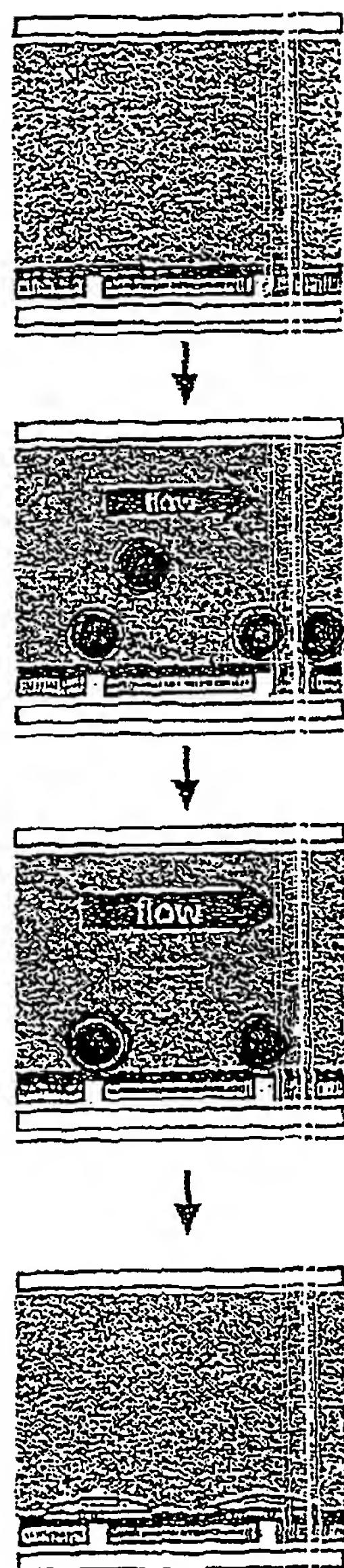


Figure 3 Electrode Array Construction, shown with optional surface patterning using aligned membranes.

Energize electrodes



equipotential lines
(from finite element analysis)

Flow cells in isotonic sucrose
Cells attracted to electrodes

cells

Flow in sucrose without cells
Increase flow
Untrapped cells removed

trapped cells

Cells adhere
Flow in DMEM (normal media)
Cells spread

spread cells

Figure 4 Process of DEP trapping with "post-and-lid" geometry, shown with optional addition of adhesiveness patterning.

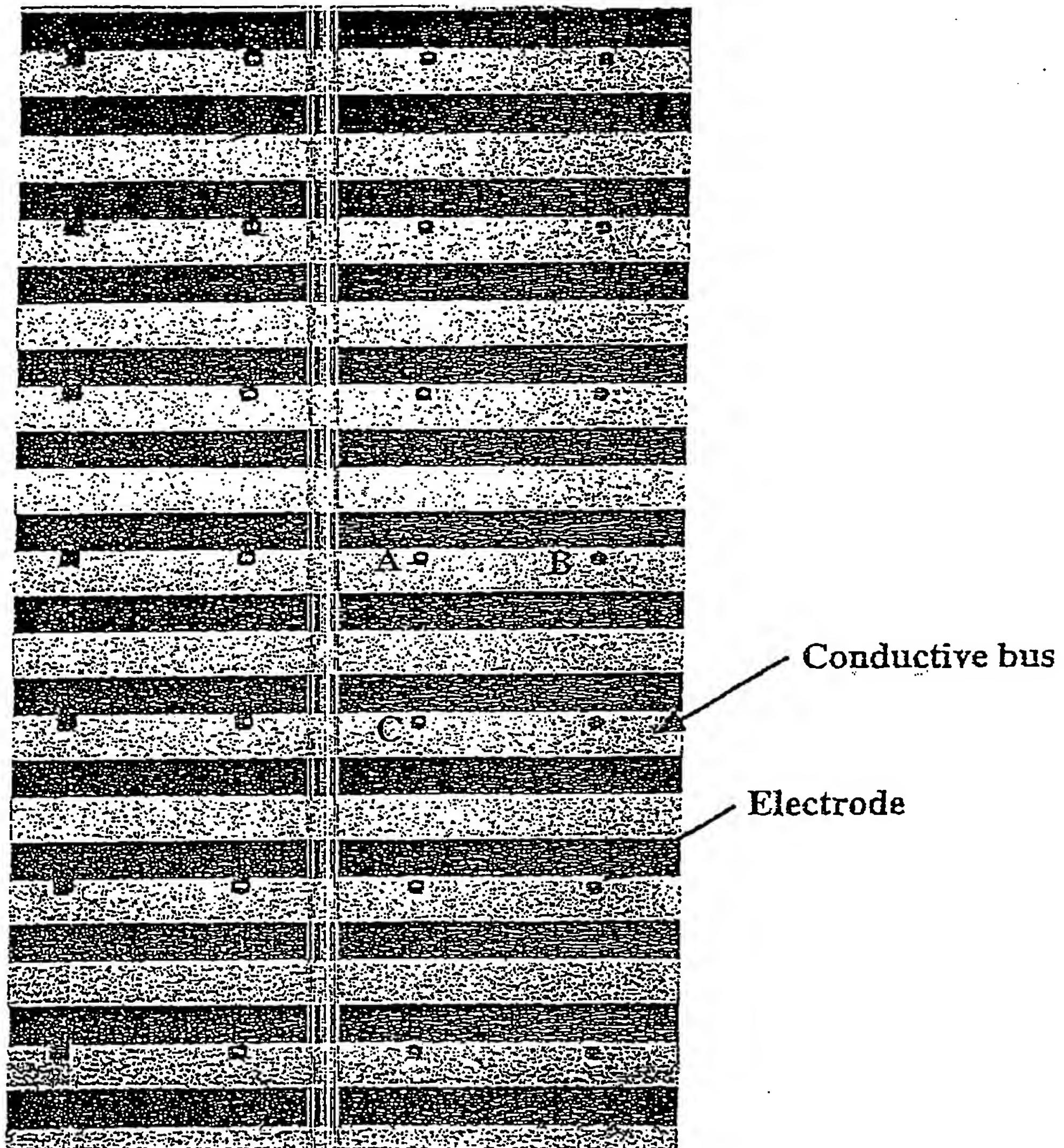


Figure 5: Electrodes (traps) or groups of electrodes with separate electrical connections are independently controllable. The surface of the chip is coated with a clear insulator except at electrode locations. Electrodes A and B are jointly actuated, because they are on the same conductive bus. Electrode C, on a separate bus, is actuated separately from electrodes A and B. Separate connections to individual electrodes are also possible. Buses not containing electrodes are inactive.